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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/824,310

04/13/2004

Junko Yotani

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8791 7590 05/09/2007

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EXAMINER

STOUFFER, KELLY M

ART UNIT

PAPER NUMBER

1762

MAIL DATE

DELIVERY MODE

05/09/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Advisory Action  
Before the Filing of an Appeal Brief**

Application No.

10/824,310

Applicant(s)

YOTANI ET AL.

Examiner

Kelly Stouffer

Art Unit

1762

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 02 May 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.  
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**NOTICE OF APPEAL**

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

**AMENDMENTS**

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☐ They raise the issue of new matter (see NOTE below);  
(c) ☒ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.  
The status of the claim(s) is (or will be) as follows:  
Claim(s) allowed: \_\_\_\_\_.  
Claim(s) objected to: \_\_\_\_\_.  
Claim(s) rejected: 1-7.  
Claim(s) withdrawn from consideration: \_\_\_\_\_.

**AFFIDAVIT OR OTHER EVIDENCE**

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

**REQUEST FOR RECONSIDERATION/OTHER**

11. ☐ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: \_\_\_\_\_.  
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). \_\_\_\_\_.  
13. ☒ Other: See attached Detailed Action.

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 2 May 2007 have been fully considered but they are not persuasive. In addition, the amendment filed 2 May 2007 has not been entered because it does not simplify the issues for appeal, as discussed by the following paragraphs.

The applicant argues that Uemura et al. in view of Liu et al. does not include increasing the number of ends of the fibers. However, as was stated in the previous office action, Liu et al. uses the laser to remove nanotubes from the ends of other nanotubes to remove catalyst byproducts and unwanted amorphous carbon (paragraph 0024). Liu et al. also discusses that the tips of the invention contribute to a decreased threshold voltage required for field emission (paragraph 0026). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention for Liu et al. to include using the laser to remove nanotubes from the ends of other nanotubes not only to remove catalyst byproducts and unwanted amorphous carbon, but to create more ends of nanotubes so that the free ends can contribute to a more decreased threshold voltage required for field emission.

The applicant further argues that there is no motivation to combine the references because one of ordinary skill in the art would not be motivated to replace the perpendicular nanotubes of Liu by the curled nanotubes of Uemura because this structure would be contrary to that of Liu. However, the examiner notes that this rejection is made under Uemura et al. in view of Liu et al. The elements of Liu et al., the

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secondary reference, would not be replaced by the primary reference Uemura et al. Further, as was stated in the previous office action, Uemura et al. shows all of the elements of the applicants' claimed invention in claim 1, except for smoothing the fibers by irradiation with a laser to create more loose ends of the fibers. Liu et al. teaches (or makes obvious) this feature to one of ordinary skill in the art at the time of the invention to remove byproducts on the nanofilm surface, to make a smoother surface, and to decrease threshold voltage required by field emission by the nanotubes (see passages cited above and in the final office action). The examiner does not suggest that one should replace the perpendicular nanotubes of Liu with the curled nanotubes of Uemura. Neither reference suggests that because of orientation to the substrate, laser smoothing would not be functional in both cases and there is a reasonable expectation for success for combining the nanotubes of Uemura with the laser smoothing process of Liu. It is further noted by the examiner, that nanotubes appear to be grown by Uemura perpendicular to the substrate in the figures. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Therefore, the rejections of the previous office action are maintained, and the amendments, by not overcoming or simplifying issues, will not be entered at this time.

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**Conclusion**


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly Stouffer whose telephone number is (571) 272-2668. The examiner can normally be reached on Monday - Thursday 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kelly Stouffer  
Examiner  
Art Unit 1762

kms

  
**TIMOTHY MEKS**  
**SUPERVISORY PATENT EXAMINER**